Pneumatic Link Clamp

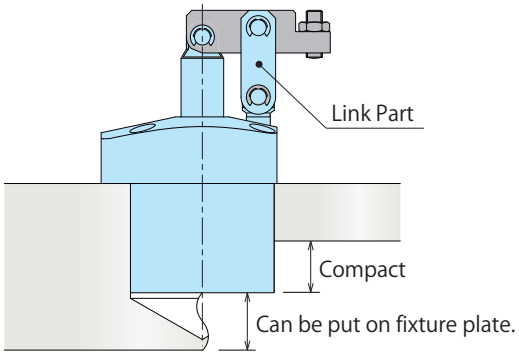
Model **WCA**

Since the link part is built in clamp body, it is compact

It is not necessary to design link part separately.

● Compact and Easy to Use

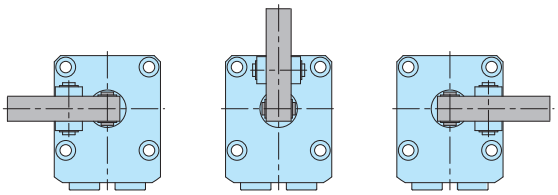
Since the link part is built in clamp body,
it is not necessary to design link part separately.
It eliminates design and manufacturing precise link mechanism.
(Only clamp arm needs to be manufactured.)



● There are 3 levers in three different locations.

Lever Direction（from the view of pipe）

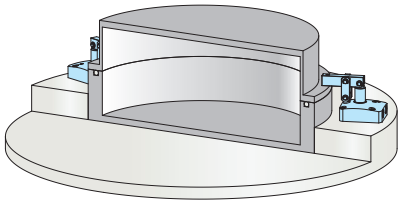
L：Left　C：Center　R：Right



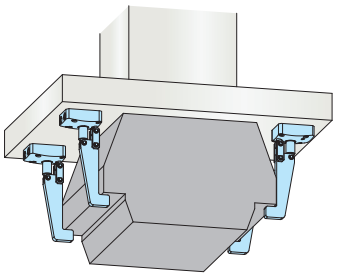
Action Description

Released State　　Locked State

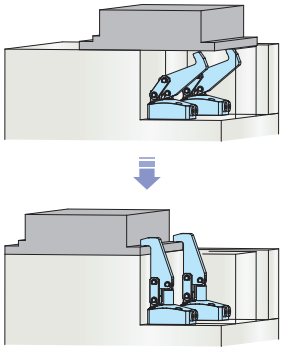
Application Examples



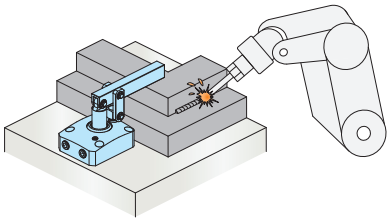
For improvement of leak-tester set up



For transfer and gantry loader



Minor change on the lever,
prevents interrupting with workpiece transfer



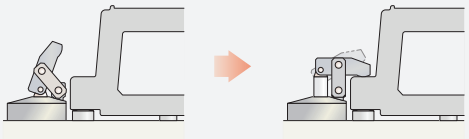
In the welding process
※ Please contact us.

Standard Model

Model **WCA**

External Dimensions
→ P.205

Link Clamp Mechanism

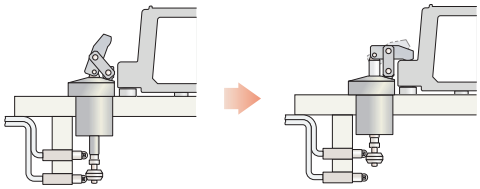


Double End Rod Option for Dog

Model **WCA-D**

External Dimensions
→ P.207

Lock / Release action
can be detected by
a limit switch



Accessories

Lever
Model **WCZ-L**

→ P.210

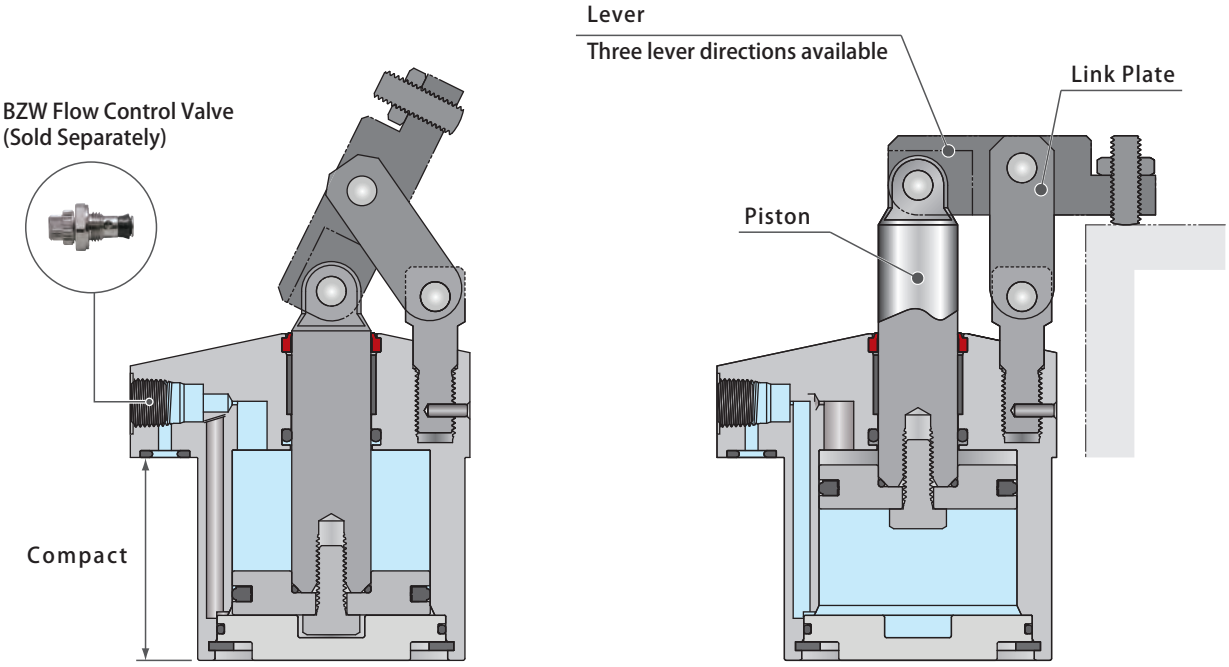
Manifold Block
Model **WHZ-MD**

→ P.1025

Speed Control Valve
Model **BZW**

→ P.213

Action Description



When released

When air is supplied to release port, release action is proceeded.

When locked

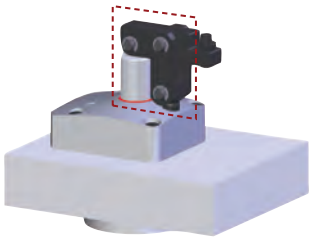
When air is supplied to lock port, lock action is proceeded.

The link mechanical section is in body

Since the link mechanism is built in, cost reduction for design and production is possible.

Design Cost	All you have to do is select the clamp & lever design. (FYI: when you use with linear cylinder, the design for link mechanical part, capacity and dimension is needed)
Preparation Cost	Only lever to be manufactured. High precision Fixture Machining is eliminated.
External Dimensions	Building link part in body makes it possible to fit in fixture and plate. (For Linear cylinders, large space is required as the dimensions of Liner cylinder are bigger compared to mechanical link mechanisms)
Maintenance	Only Top plate to be maintained. Or take off the clamps easily.
Other (Piping)	All piping work is done since pipes go through only inside the fixture and under the flange. (The outside piping type is also available)

The Link Mechanical Part



Excellent Coolant Resistance

Our exclusive dust seal is designed to protect against high pressure coolant.
It also has high durability against chlorine-based coolant by using a sealing material with excellent chemical resistance.

Able to Attach Speed Control Valve Directly

When using the gasket (-A option) as piping method, it is available for directly mounting the speed control valve (BZW-B) with air venting function (speed control valve is sold separately).

Model No. Indication

WCA 040 1 - 2 A R [ ]
1 2 3 4 5

1 Cylinder Inside Diameter

032 : Cylinder Inside Diameter=ϕ32mm
040 : Cylinder Inside Diameter=ϕ40mm
050 : Cylinder Inside Diameter=ϕ50mm
063 : Cylinder Inside Diameter=ϕ63mm

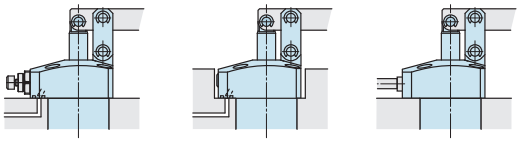
2 Design No.

1 : Revision Number

3 Piping Method

A : Gasket Option (With Ports for Speed Controller)
G : Gasket Option (with R Thread Plug)
S : Piping Option (Rc Thread)

A G S



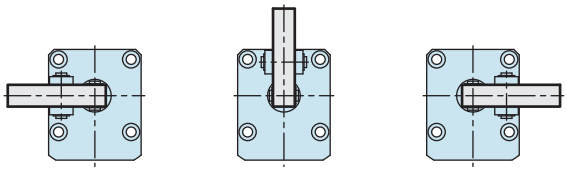
Gasket Option		Piping Option
With Ports for Speed Controller R thread plug is included (order speed controller separately)	With R Thread Plug	Rc Thread No Gasket Port

※ Speed control valve (BZW) is sold separately. Please refer to P.213.

4 Lever Direction

L : Left
C : Center
R : Right

L C R



5 Action Confirmation Method

Blank : Standard
D : Double End Rod Option for Dog

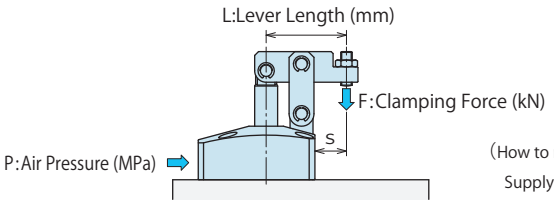
Blank D

Specifications

Model No.			WCA0321-2□□□	WCA0401-2□□□	WCA0501-2□□□	WCA0631-2□□□
Cylinder Inside Diameter		mm	32	40	50	63
Action Confirmation 5 When Blank is chosen	Cylinder Area for Locking	cm²	8.04	12.57	19.63	31.17
	Clamping Force (Calculation Formula) ※1	kN	$F=\frac{14.11\times P}{L-19.5}$	$F=\frac{23.76\times P}{L-21}$	$F=\frac{44.17\times P}{L-25}$	$F=\frac{84.16\times P}{L-30}$
Action Confirmation 5 When D is chosen	Cylinder Area for Locking	cm²	7.26	11.44	18.10	29.63
	Clamping Force (Calculation Formula) ※1	kN	$F=\frac{12.74\times P}{L-19.5}$	$F=\frac{21.61\times P}{L-21}$	$F=\frac{40.72\times P}{L-25}$	$F=\frac{80.01\times P}{L-30}$
Full Stroke		mm	23	24.5	28.5	34
Vertical Stroke		mm	20	21.5	25.5	31
Extra Stroke		mm	3	3	3	3
Max. Operating Pressure		MPa	1.0			
Min. Operating Pressure※2		MPa	0.1			
Withstanding Pressure		MPa	1.5			
Operating Temperature		℃	0 ~ 70			
Usable Fluid			Dry Air			

Notes
※ 1. F: Clamping Force (kN), P:Supply Air Pressure (MPa), L: Distance between the piston center and the clamping point (mm).
※ 2. Minimum pressure to operate the clamp with no load.
1. Please see the external dimension if you need the information of mass and cylinder volume.

Clamping Force Curve (Action Confirmation Method･･･When Blank is chosen)



Model No. Indication

WCA □ 1 - 2 [A/G/S] [L/C/R] □

1 Body Size

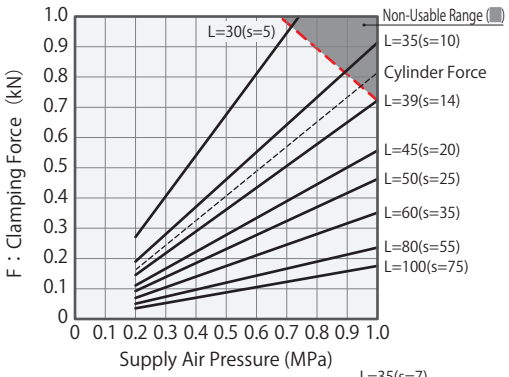
5 Action Confirmation Method
: When "Blank" is chosen

(How to read the clamping force) When WCA0501-2□□ is used.
Supply Air Pressure 0.6MPa, Lever Length L=50mm, The clamping force is about 1.06kN.

WCA0321-2□□

Clamping Force Calculation Formula ※1 (kN) F = (14.11 × P) / (L - 19.5)

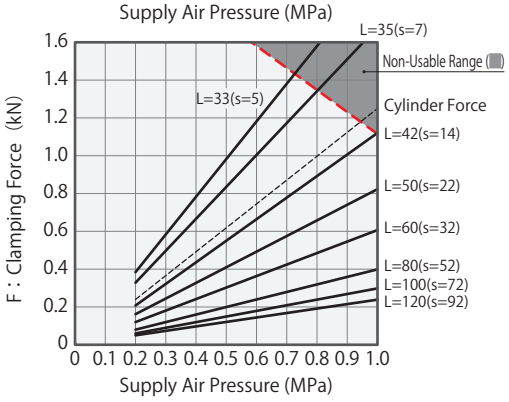
Air Pressure (MPa)	Cylinder Force (kN)	Clamping Force(kN) Lever Length L(mm) 30	35	39	45	50	60	80	100	Min. Lever Length (L) (mm)
1.0	0.80			0.72	0.55	0.46	0.35	0.23	0.18	39
0.9	0.72			0.65	0.50	0.42	0.31	0.21	0.16	36
0.8	0.64		0.73	0.58	0.44	0.37	0.28	0.19	0.14	33
0.7	0.56	0.94	0.64	0.51	0.39	0.32	0.24	0.16	0.12	30
0.6	0.48	0.81	0.55	0.43	0.33	0.28	0.21	0.14	0.11	28
0.5	0.40	0.67	0.46	0.36	0.28	0.23	0.17	0.12	0.09	26
0.4	0.32	0.54	0.36	0.29	0.22	0.19	0.14	0.09	0.07	25
0.3	0.24	0.40	0.27	0.22	0.17	0.14	0.11	0.07	0.05	25
0.2	0.16	0.27	0.18	0.15	0.11	0.09	0.07	0.05	0.04	25
Max. Operating Pressure (MPa)		0.7	0.8	1.0	1.0	1.0	1.0	1.0	1.0	



WCA0401-2□□

Clamping Force Calculation Formula ※1 (kN) F = (23.76 × P) / (L - 21)

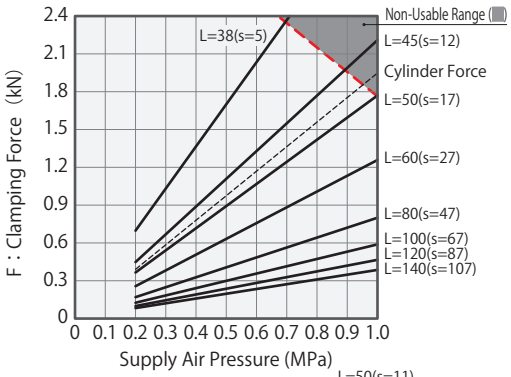
Air Pressure (MPa)	Cylinder Force (kN)	Clamping Force(kN) Lever Length L(mm) 33	35	42	50	60	80	100	120	Min. Lever Length (L) (mm)
1.0	1.26			1.13	0.82	0.61	0.40	0.30	0.24	42
0.9	1.13			1.02	0.74	0.55	0.36	0.27	0.22	38
0.8	1.01		1.36	0.91	0.66	0.49	0.32	0.24	0.19	35
0.7	0.88	1.39	1.19	0.79	0.57	0.43	0.28	0.21	0.17	32
0.6	0.75	1.19	1.02	0.68	0.49	0.37	0.24	0.18	0.14	30
0.5	0.63	0.99	0.85	0.57	0.41	0.31	0.20	0.15	0.12	28
0.4	0.50	0.79	0.68	0.45	0.33	0.24	0.16	0.12	0.10	28
0.3	0.38	0.59	0.51	0.34	0.25	0.18	0.12	0.09	0.07	28
0.2	0.25	0.40	0.34	0.23	0.16	0.12	0.08	0.06	0.05	28
Max. Operating Pressure (MPa)		0.7	0.8	1.0	1.0	1.0	1.0	1.0	1.0	



WCA0501-2□□

Clamping Force Calculation Formula ※1 (kN) F = (44.17 × P) / (L - 25)

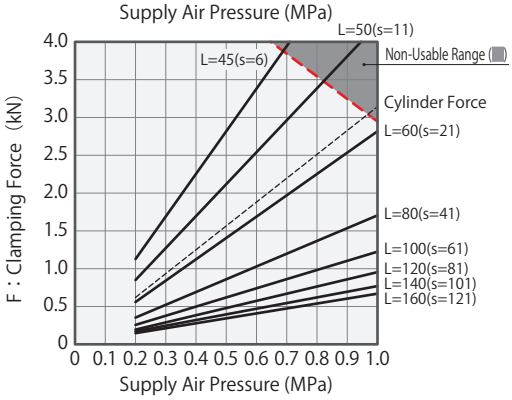
Air Pressure (MPa)	Cylinder Force (kN)	Clamping Force(kN) Lever Length L(mm) 38	45	50	60	80	100	120	140	Min. Lever Length (L) (mm)
1.0	1.96			1.77	1.26	0.80	0.59	0.47	0.38	50
0.9	1.77			1.59	1.14	0.72	0.53	0.42	0.35	46
0.8	1.57		1.77	1.41	1.01	0.64	0.47	0.37	0.31	42
0.7	1.37		1.55	1.24	0.88	0.56	0.41	0.33	0.27	38
0.6	1.18	2.04	1.33	1.06	0.76	0.48	0.35	0.28	0.23	36
0.5	0.98	1.70	1.10	0.88	0.63	0.40	0.29	0.23	0.19	33
0.4	0.79	1.36	0.88	0.71	0.51	0.32	0.24	0.19	0.15	33
0.3	0.59	1.02	0.66	0.53	0.38	0.24	0.18	0.14	0.12	33
0.2	0.39	0.68	0.44	0.35	0.25	0.16	0.12	0.09	0.08	33
Max. Operating Pressure (MPa)		0.6	0.8	1.0	1.0	1.0	1.0	1.0	1.0	



WCA0631-2□□

Clamping Force Calculation Formula ※1 (kN) F = (84.16 × P) / (L - 30)

Air Pressure (MPa)	Cylinder Force (kN)	Clamping Force(kN) Lever Length L(mm) 45	50	60	80	100	120	140	160	Min. Lever Length (L) (mm)
1.0	3.12			2.81	1.68	1.20	0.94	0.77	0.65	60
0.9	2.81			2.53	1.52	1.08	0.84	0.69	0.58	54
0.8	2.49		3.37	2.24	1.35	0.96	0.75	0.61	0.52	50
0.7	2.18		2.95	1.96	1.18	0.84	0.66	0.54	0.45	46
0.6	1.87	3.37	2.53	1.68	1.01	0.72	0.56	0.46	0.39	43
0.5	1.56	2.81	2.10	1.40	0.84	0.60	0.47	0.38	0.32	40
0.4	1.25	2.24	1.68	1.12	0.67	0.48	0.37	0.31	0.26	39
0.3	0.94	1.68	1.26	0.84	0.51	0.36	0.28	0.23	0.19	39
0.2	0.62	1.12	0.84	0.56	0.34	0.24	0.19	0.15	0.13	39
Max. Operating Pressure (MPa)		0.6	0.8	1.0	1.0	1.0	1.0	1.0	1.0	

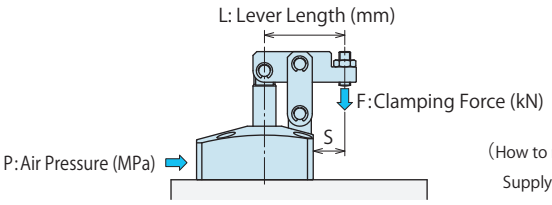


Notes

※1. F : Clamping Force (kN) , P : Supply Air Pressure (MPa) , L : Lever Length.

1. Tables and graphs shown are the relationships between the clamping force (kN) and supply air pressure (MPa).
2. Cylinder output (when L=0) cannot be calculated from the calculation formula of clamping force.
3. Using in the non-usable range may damage the clamp and lead to deformation, dragging or air leakage.

Clamping Force Curve (Action Confirmation Method・・・When D :Double End Rod is chosen)



Model No. Indication

WCA □ 1 - 2 (A/G/S) (L/C/R) D

1 Body Size

5 Action Confirmation Method : When D is chosen

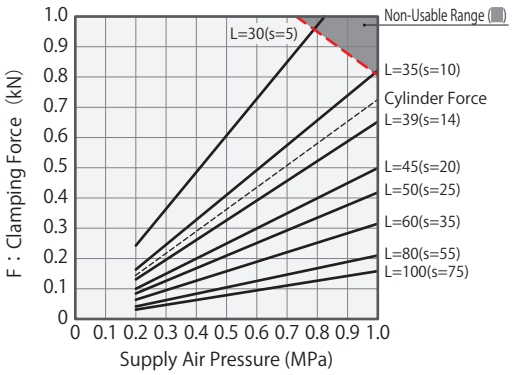
(How to read the clamping force) When WCA0501-2□□D is used

Supply Air Pressure 0.6MPa, Lever Length L=50mm, The clamping force is about 1.06kN.

WCA0321-2□□D

Clamping Force Calculation Formula ※1 (kN) F = (12.74 × P) / (L - 19.5)

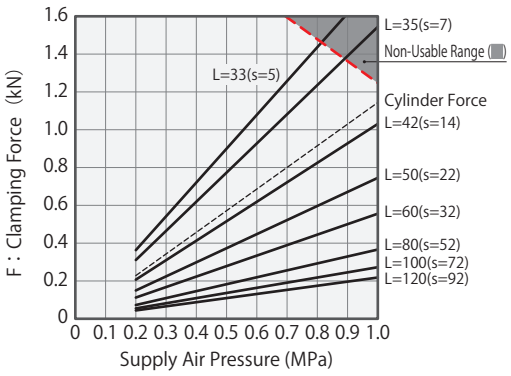
Air Pressure (MPa)	Cylinder Force (kN)	Clamping Force(kN) Lever Length L(mm) 30	35	39	45	50	60	80	100	Min. Lever Length (L) (mm)
1.0	0.73			0.65	0.50	0.42	0.32	0.21	0.16	36
0.9	0.65		0.74	0.59	0.45	0.38	0.28	0.19	0.14	33
0.8	0.58		0.66	0.52	0.40	0.33	0.25	0.17	0.13	31
0.7	0.51	0.85	0.58	0.46	0.35	0.29	0.22	0.15	0.11	29
0.6	0.44	0.73	0.49	0.39	0.30	0.25	0.19	0.13	0.10	27
0.5	0.36	0.61	0.41	0.33	0.25	0.21	0.16	0.11	0.08	25
0.4	0.29	0.49	0.33	0.26	0.20	0.17	0.13	0.08	0.06	25
0.3	0.22	0.36	0.25	0.20	0.15	0.13	0.09	0.06	0.05	25
0.2	0.15	0.24	0.16	0.13	0.10	0.08	0.06	0.04	0.03	25
Max. Operating Pressure (MPa)		0.7	0.9	1.0	1.0	1.0	1.0	1.0	1.0	



WCA0401-2□□D

Clamping Force Calculation Formula ※1 (kN) F = (21.61 × P) / (L - 21)

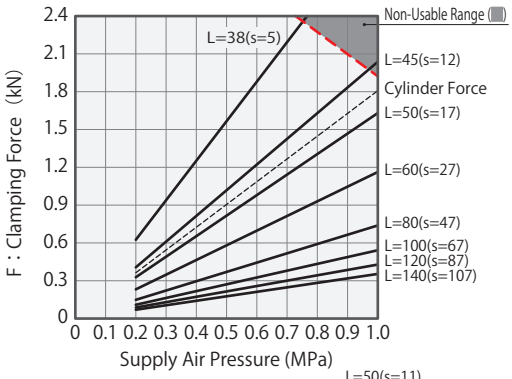
Air Pressure (MPa)	Cylinder Force (kN)	Clamping Force(kN) Lever Length L(mm) 33	35	42	50	60	80	100	120	Min. Lever Length (L) (mm)
1.0	1.14			1.03	0.75	0.55	0.37	0.27	0.22	39
0.9	1.03			0.93	0.67	0.50	0.33	0.25	0.20	36
0.8	0.91	1.44	1.24	0.82	0.60	0.44	0.29	0.22	0.18	33
0.7	0.80	1.26	1.08	0.72	0.52	0.39	0.26	0.19	0.15	31
0.6	0.69	1.08	0.93	0.62	0.45	0.33	0.22	0.16	0.13	29
0.5	0.57	0.90	0.77	0.52	0.37	0.28	0.18	0.14	0.11	28
0.4	0.46	0.72	0.62	0.41	0.30	0.22	0.15	0.11	0.09	28
0.3	0.34	0.54	0.46	0.31	0.22	0.17	0.11	0.08	0.07	28
0.2	0.23	0.36	0.31	0.21	0.15	0.11	0.07	0.06	0.04	28
Max. Operating Pressure (MPa)		0.8	0.8	1.0	1.0	1.0	1.0	1.0	1.0	



WCA0501-2□□D

Clamping Force Calculation Formula ※1 (kN) F = (40.72 × P) / (L - 25)

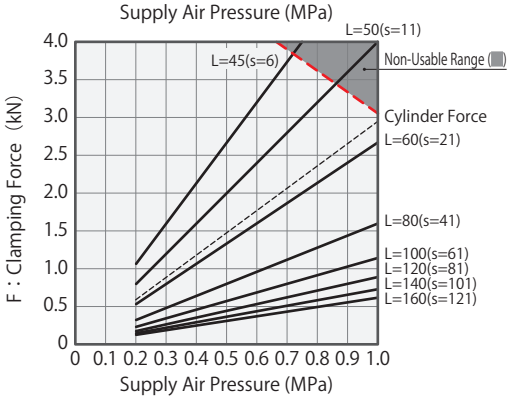
Air Pressure (MPa)	Cylinder Force (kN)	Clamping Force(kN) Lever Length L(mm) 38	45	50	60	80	100	120	140	Min. Lever Length (L) (mm)
1.0	1.81			1.63	1.16	0.74	0.54	0.43	0.35	47
0.9	1.63		1.83	1.47	1.05	0.67	0.49	0.39	0.32	43
0.8	1.45		1.63	1.30	0.93	0.59	0.43	0.34	0.28	40
0.7	1.27	2.19	1.43	1.14	0.81	0.52	0.38	0.30	0.25	37
0.6	1.09	1.88	1.22	0.98	0.70	0.44	0.33	0.26	0.21	35
0.5	0.90	1.57	1.02	0.81	0.58	0.37	0.27	0.21	0.18	33
0.4	0.72	1.25	0.81	0.65	0.47	0.30	0.22	0.17	0.14	33
0.3	0.54	0.94	0.61	0.49	0.35	0.22	0.16	0.13	0.11	33
0.2	0.36	0.63	0.41	0.33	0.23	0.15	0.11	0.09	0.07	33
Max. Operating Pressure (MPa)		0.7	0.9	1.0	1.0	1.0	1.0	1.0	1.0	



WCA0631-2□□D

Clamping Force Calculation Formula ※1 (kN) F = (80.01 × P) / (L - 30)

Air Pressure (MPa)	Cylinder Force (kN)	Clamping Force(kN) Lever Length L(mm) 45	50	60	80	100	120	140	160	Min. Lever Length (L) (mm)
1.0	2.96			2.67	1.60	1.14	0.89	0.73	0.62	57
0.9	2.67			2.40	1.44	1.03	0.80	0.66	0.55	52
0.8	2.37		3.20	2.13	1.28	0.91	0.71	0.58	0.49	48
0.7	2.07	3.73	2.80	1.87	1.12	0.80	0.62	0.51	0.43	45
0.6	1.78	3.20	2.40	1.60	0.96	0.69	0.53	0.44	0.37	42
0.5	1.48	2.67	2.00	1.33	0.80	0.57	0.45	0.36	0.31	39
0.4	1.19	2.13	1.60	1.07	0.64	0.46	0.36	0.29	0.25	39
0.3	0.89	1.60	1.20	0.80	0.48	0.34	0.27	0.22	0.19	39
0.2	0.59	1.07	0.80	0.53	0.32	0.23	0.18	0.15	0.12	39
Max. Operating Pressure (MPa)		0.7	0.8	1.0	1.0	1.0	1.0	1.0	1.0	



Notes

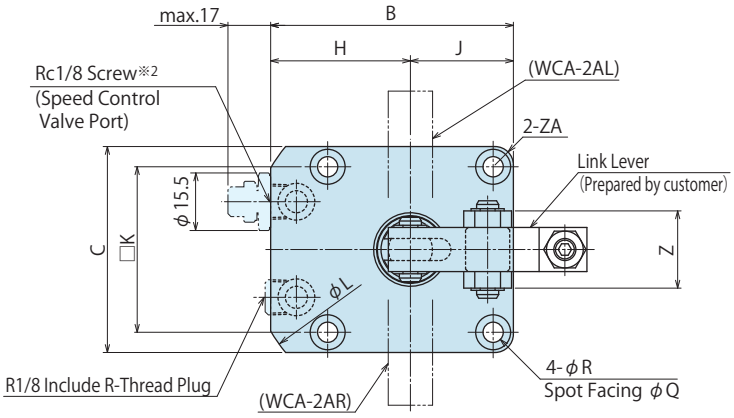
※1. F : Clamping Force (kN) , P : Supply Air Pressure (MPa) , L : Lever Length.

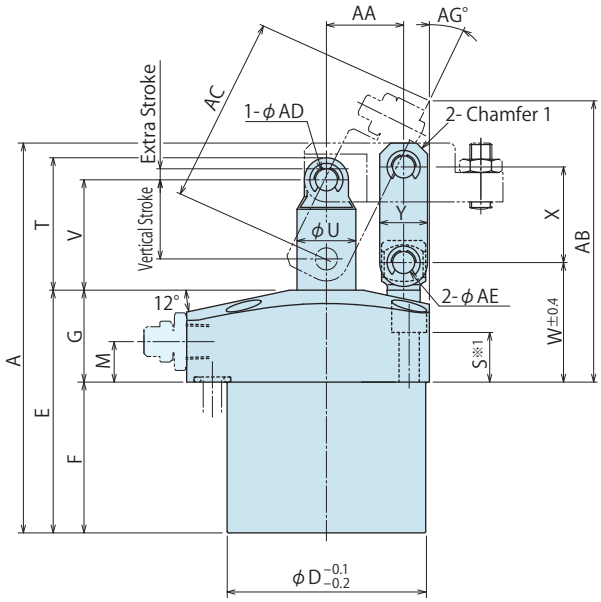
1. Tables and graphs shown are the relationships between the clamping force (kN) and supply air pressure (MPa).
2. Cylinder output (when L=0) cannot be calculated from the calculation formula of clamping force.
3. Using in the non-usable range may damage the clamp and lead to deformation, dragging or air leakage.

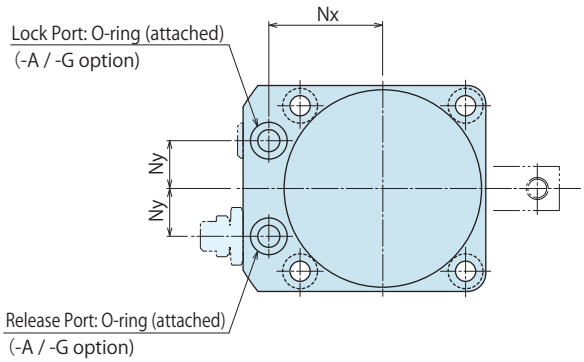
External Dimensions

A : Gasket Option (Speed Control Valve Corresponding Option (Include R-Thread Plug))

※The drawing shows the locked state of WCA-2AC.







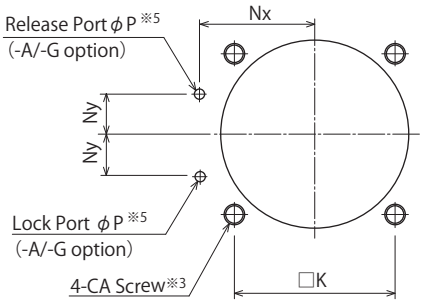
Notes

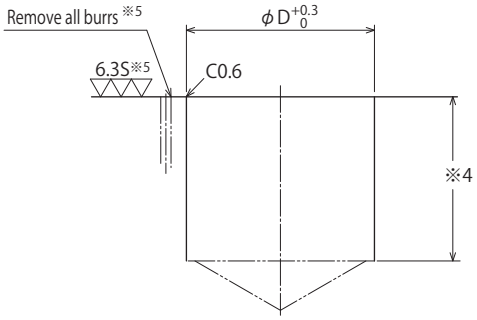
※1. Mounting bolts are not provided.
Customer should prepare based on dimension "S".

※2. Speed control valve is sold separately.
Please order separately (see P.213).

1. Please use the pin supplied (equivalent to ϕADf6, ϕAEf6, HRC60) for mounting pin for lever.

Machining Dimensions of Mounting Area





Notes

※3. The CA thread depth of the mounting bolt should be decided based on the mounting height with reference to S size.

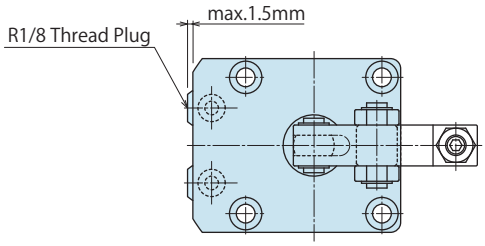
※4. The ϕD depth of the body mounting hole should be decided from dimension F.

※5. This process is for -A/-G gasket option.

Piping Method

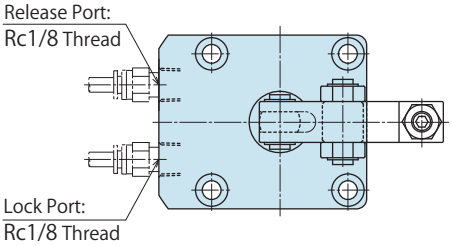
G: Gasket Option (R Thread Plug)

※The drawing shows the locked state of WCA-2GC.

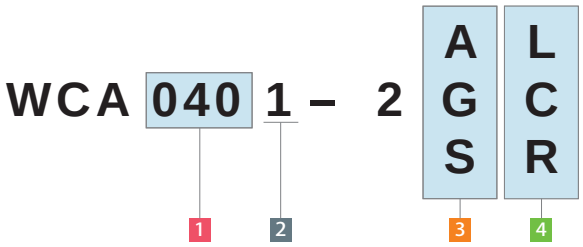


S：Piping Option (Rc Thread)

※The drawing shows the locked state of WCA-2SC.



Model No. Indication



(Model No.：WCA0500-2AC)

1 Cylinder Force
2 Design No.
3 Piping Method
4 Lever Direction
5 Action Confirmation (When Blank is chosen)

External Dimensions and Machining Dimensions for Mounting

(mm)

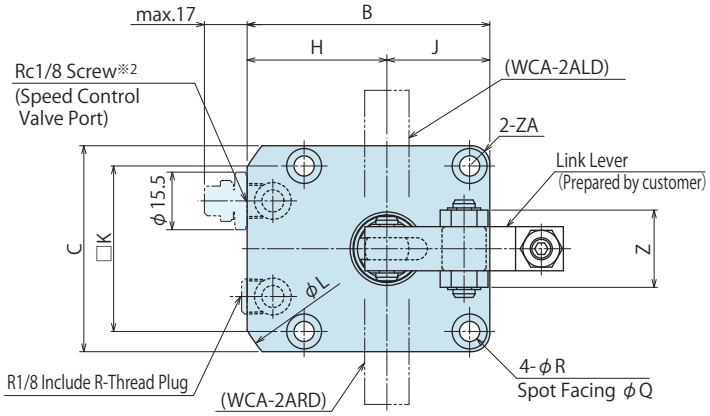
Model No.	WCA0321-2□□	WCA0401-2□□	WCA0501-2□□	WCA0631-2□□
Full Stroke	23	24.5	28.5	34
Vertical Stroke	20	21.5	25.5	31
Extra Stroke	3	3	3	3
A	99	106	129	148.5
B	60	66	76	87
C	50	56	66	78
D	46	54	64	77
E	64	66	81	89
F	39	41	51	59
G	25	25	30	30
H	35	38	43	48
J	25	28	33	39
K	39	45	53	65
L	79	88	98	113
M	11	11	11	11
Nx	28	31	36	41
Ny	10	13	15	20
P	5	5	5	5
Q	9.5	9.5	11	11
R	5.5	5.5	6.8	6.8
S	14	13.5	16	15
T	31.5	36	40	50.5
U	14	16	18	22
V	27	30	34	42.5
W	31	32.5	37.5	40.5
X	23.5	26	32.5	39.5
Y	11	13	16	18
Z	19	21	28	37
Chamfer 1	C2.5	C3	C3	C5
AA	19.5	21	25	30
AB	72	76.5	92.2	105.7
AC	46.9	50.9	62.7	74.7
AD	5	6	6	8
AE	5	6	8	10
AG	26.5	26.4	26.1	25.2
CA (Nominal×Pitch)	M5×0.8	M5×0.8	M6×1	M6×1
ZA	R5	R5	R6	R6
O-ring (-A/-G option)	1BP7	1BP7	1BP7	1BP7
Cylinder Capacity cm³ Lock	18.5	30.8	56.0	106.0
Cylinder Capacity cm³ Release	15.0	25.9	48.7	93.1
Mass※6 kg	0.4	0.5	0.8	1.2

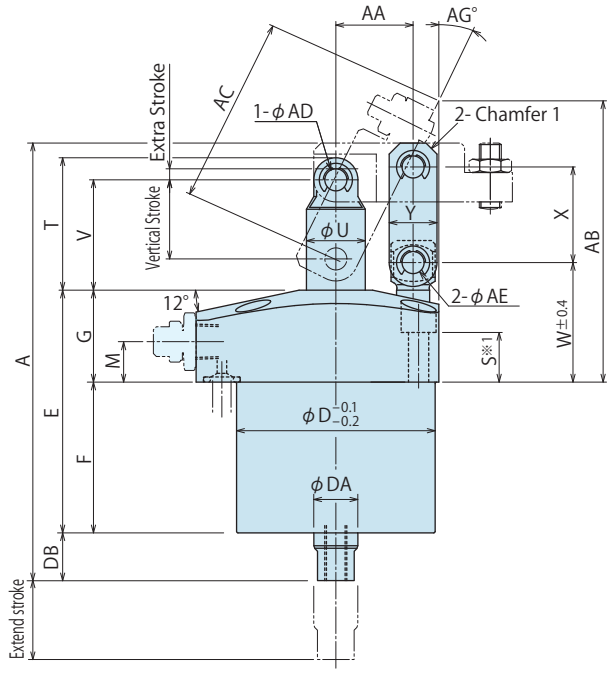
Note
※ 6. Mass of single clamp without the link lever.

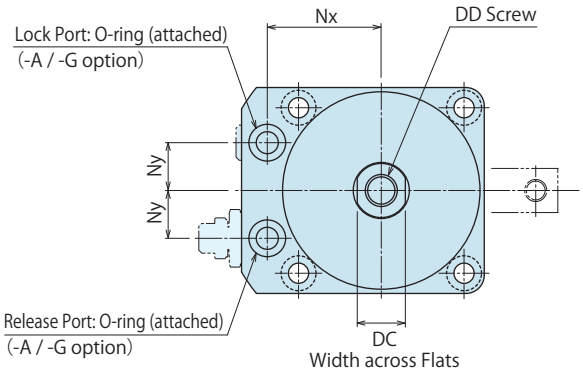
External Dimensions

A : Gasket Option (Speed Control Valve Corresponding Option (Include R-Thread Plug))

※The drawing shows the locked state of WCA-2ACD.







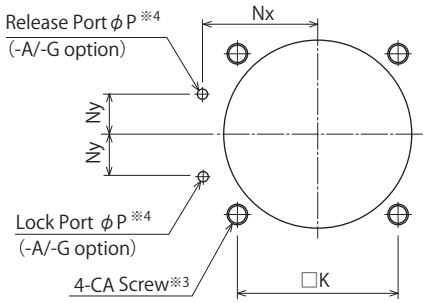
Notes

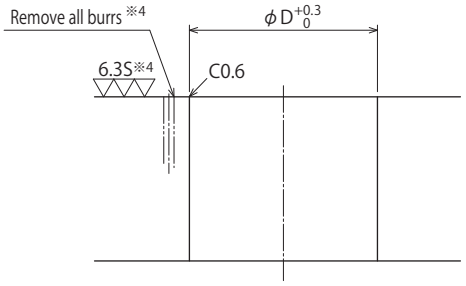
※1. Mounting bolts are not provided.
Customer should prepare based on dimension "S".

※2. Speed control valve is sold separately.
Please order separately (see P.213).

1. Please use the pin supplied (equivalent to ϕADf6, ϕAEf6, HRC60) for mounting pin for lever.

Machining Dimensions of Mounting Area





Notes

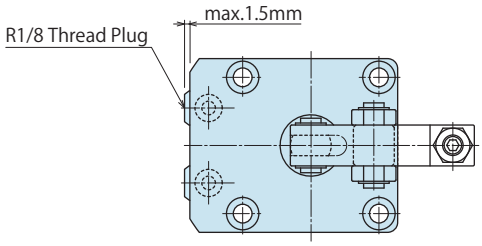
※3. The CA thread depth of the mounting bolt should be decided based on the mounting height with reference to S size.

※4. This process is for -A/-G gasket option.

Piping Method

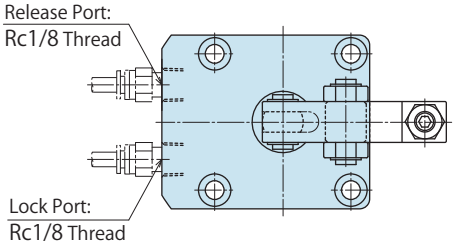
G: Gasket Option (R Thread Plug)

※The drawing shows the locked state of WCA-2GCD.

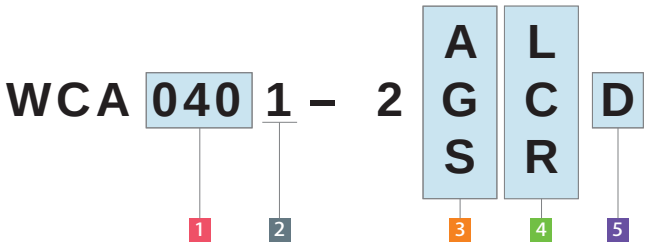


S：Piping Option (Rc Thread)

※The drawing shows the locked state of WCA-2SCD.



Model No. Indication



(Model No. : WCA0500-2ACD)

1 Cylinder Force
2 Design No.
3 Piping Method
4 Lever Direction
5 Action Confirmation
(When D is chosen : Double End Rod Option for Dog)

External Dimensions and Machining Dimensions for Mounting

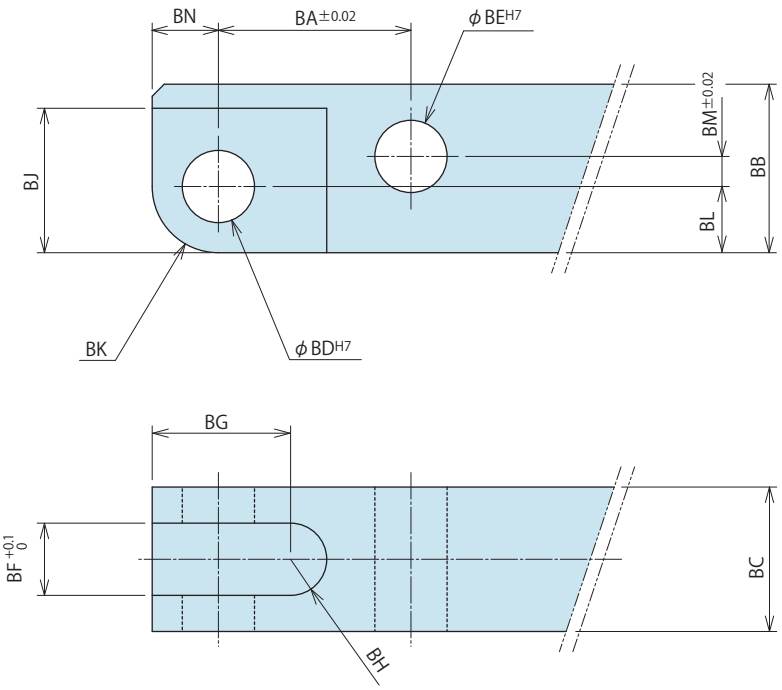
(mm)

Model No.	WCA0321-2□□D	WCA0401-2□□D	WCA0501-2□□D	WCA0631-2□□D
Full Stroke	23	24.5	28.5	34
Vertical Stroke	20	21.5	25.5	31
Extra Stroke	3	3	3	3
A	112	119	142	161.5
B	60	66	76	87
C	50	56	66	78
D	46	54	64	77
E	64	66	81	89
F	39	41	51	59
G	25	25	30	30
H	35	38	43	48
J	25	28	33	39
K	39	45	53	65
L	79	88	98	113
M	11	11	11	11
Nx	28	31	36	41
Ny	10	13	15	20
P	5	5	5	5
Q	9.5	9.5	11	11
R	5.5	5.5	6.8	6.8
S	14	13.5	16	15
T	31.5	36	40	50.5
U	14	16	18	22
V	27	30	34	42.5
W	31	32.5	37.5	40.5
X	23.5	26	32.5	39.5
Y	11	13	16	18
Z	19	21	28	37
Chamfer 1	C2.5	C3	C3	C5
AA	19.5	21	25	30
AB	72	76.5	92.2	105.7
AC	46.9	50.9	62.7	74.7
AD	5	6	6	8
AE	5	6	8	10
AG	26.5	26.4	26.1	25.2
CA (Nominal×Pitch)	M5×0.8	M5×0.8	M6×1	M6×1
DA	10	12	14	14
DB	13	13	13	13
DC	8	10	12	12
DD (Nominal×Pitch×Depth)	M5×0.8×12	M6×1×15	M8×1.25×18	M8×1.25×18
ZA	R5	R5	R6	R6
O-ring (-A/-G option)	1BP7	1BP7	1BP7	1BP7
Cylinder Capacity cm³ Lock	16.7	28.0	51.6	100.8
Cylinder Capacity cm³ Release	15.0	25.9	48.7	93.1
Mass※5 kg	0.4	0.5	0.8	1.3

Note
※ 5. Mass of single clamp without the link lever.

Link Lever Design Dimension

※ Reference for designing link lever.



Calculation List of Link Lever Design Dimension

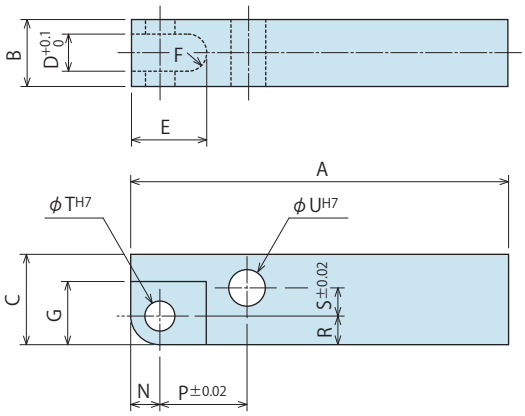
(mm)

Corresponding Model No.	WCA0321	WCA0401	WCA0501	WCA0631
BA	19.5	21	25	30
BB	12.5	16	20	25
BC	$10\ ^{0}_{-0.2}$	$12\ ^{0}_{-0.3}$	$16\ ^{0}_{-0.3}$	$19\ ^{0}_{-0.3}$
BD	$5\ ^{+0.012}_{0}$	$6\ ^{+0.012}_{0}$	$6\ ^{+0.012}_{0}$	$8\ ^{+0.015}_{0}$
BE	$5\ ^{+0.012}_{0}$	$6\ ^{+0.012}_{0}$	$8\ ^{+0.015}_{0}$	$10\ ^{+0.015}_{0}$
BF	5	6	8	10
BG	10	13	13	17
BH	R2.5	R3	R4	R5
BJ	10	13	13	17.5
BK	R4.5	R6	R6	R8
BL	4.5	6	6	8
BM	2.5	3.5	6	7.5
BN	4.5	6	6	8

Notes

1. Design the link lever length according to the performance graph.
2. If the link lever is not in accordance with the dimension shown above, performance may be degraded and damage can occur.
3. Please use the attached pin (equivalent to ϕADf6, ϕAEf6, HRC60) as the mounting pin for lever.
   (Please refer to each external dimension of WCA for the dimensions ϕAD and ϕAE.)

Accessories：Material Link Lever



Model No. Indication

WCZ 040 0 – L2

040: Size (Refer to following table)

0 – L2: Design No. (Revision Number)

(mm)

Model No.	WCZ0320-L2	WCZ0400-L2	WCZ0500-L2	WCZ0630-L2
Corresponding Model No.	WCA0321	WCA0401	WCA0501	WCA0631
A	90	100	115	140
B	$10^{\ 0}_{-0.2}$	$12^{\ 0}_{-0.3}$	$16^{\ 0}_{-0.3}$	$19^{\ 0}_{-0.3}$
C	12.5	16	20	25
D	5	6	8	10
E	12.5	16	17	22
F	R2.5	R3	R4	R5
G	10	13	13	17.5
N	4.5	6	6	8
P	19.5	21	25	30
R	4.5	6	6	8
S	2.5	3.5	6	7.5
T	$5^{\ +0.012}_{\ 0}$	$6^{\ +0.012}_{\ 0}$	$6^{\ +0.012}_{\ 0}$	$8^{\ +0.015}_{\ 0}$
U	$5^{\ +0.012}_{\ 0}$	$6^{\ +0.012}_{\ 0}$	$8^{\ +0.015}_{\ 0}$	$10^{\ +0.015}_{\ 0}$

Notes

1. Material S45C
2. If necessary, the front end should be additionally machined.
3. Please use the attached pin (equivalent to ϕADf6、ϕAEf6、HRC60) as the mounting pin for lever.
   (Refer to the external dimensions for ϕAD, ϕAE.)

Cautions

Notes for Design

1) Check Specifications

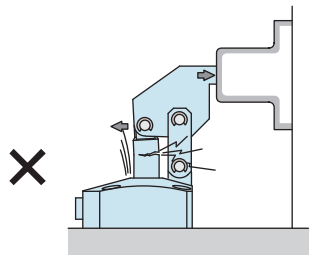
● Please use each product according to the specifications.

2) Notes for Circuit Design

● Never supply pressure simultaneously to lock and release ports. If there is something wrong with the circuit design, it leads to get the applications damaged and work wrongly.

3) Notes for Link Lever Design

● Make sure no force is applied to the piston rod except the axial direction. (Make sure the clamp surface and the mounting surface on the workpiece are parallel.) The usage like the one shown in the drawing below will apply a large bending stress to the piston rod and must be avoided.

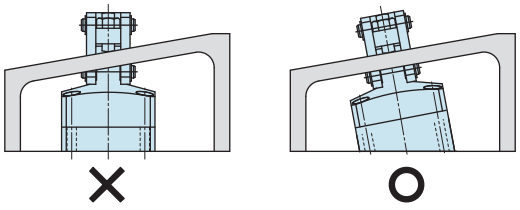


4) When using on a welding fixture, the exposed area of piston rod and link plate should be protected.

● If spatter gets onto the sliding surface it may lead to malfunction and fluid leakage.

5) When clamping on a sloped surface of the workpiece

● Make sure the clamp surface and the mounting surface on the workpiece are parallel.

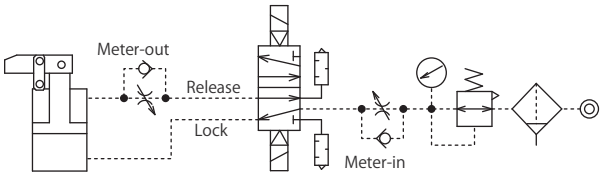


6) When using in a dry environment.

● The link pin can dry out. Grease it periodically or use a special pin. Contact us for the specifications for special pins.

7) Speed Adjustment

● If the clamp operates too fast the parts will wear out and become damaged more quickly leading to equipment failure. Generally air supply should be adjusted to obtain 1 second clamping action.
To adjust the speed, install a speed controller (meter-in) and gradually raise it to the designated speed from the low speed side (small flow). If the speed control is carried out from high speed (the status of big flow), the machine and equipment may be damaged.



Recommended Circuit

When multiple clamps are used simultaneously, put a flow controller (meter-out) on each clamp.

Installation Notes

1) Check the fluid to use.
- Please supply filtered clean dry air.
- Oil supply with a lubricator etc. is unnecessary.

2) Procedure before Piping
- The pipeline, piping connector and fixture circuits should be cleaned and flushed thoroughly.
  The dust and cutting chips in the circuit may lead to fluid leakage and malfunction.
- There is no filter provided with this product for prevention of contaminants in the air circuit.

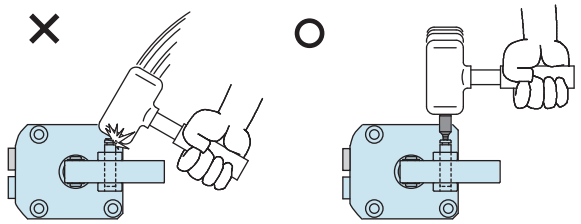
3) Applying Sealing Tape
- Wrap with tape 1 to 2 times following the screwing direction.
  Wrapping in the wrong direction will cause leaks and malfunction.
- Pieces of the sealing tape can lead to air leaks and malfunction.
- When piping, be careful that contaminant such as sealing tape does not enter in products.

4) Mounting the Unit
- When mounting the product use four hexagon socket bolts (with tensile strength of 12.9) and tighten them with the torque shown in the chart below. Tightening with greater torque than recommended can depress the seating surface or break the bolt.

Model No.	Thread Size	Tightening Torque (N·m)
WCA0321	M5×0.8	6.3
WCA0401	M5×0.8	6.3
WCA0501	M6×1	10
WCA0631	M6×1	10

5) Installing Flow Control Valve
- Torque to 5 – 7Nm.

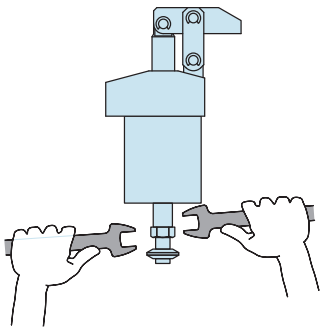
6) Mounting and removing the link lever.
- When inserting the link pin, do not hit the pin directly with a hammer. When using a hammer to insert the pin, always use a cover plate with a smaller diameter than the snap ring groove on the pin.



7) Speed Adjustment
- Please perform speed adjustment by the standard of lock operation within 0.5 to 1.0 second.
  If the clamp operates too fast the parts will wear out and become damaged more quickly leading to equipment failure.
- Turn the flow control valve gradually from the low-speed side (small flow) to the high-speed side (large flow) to adjust the speed.

8) Checking Looseness and Retightening
- At the beginning of the machine installation, the bolt and nut may be tightened lightly.
  Check the looseness and re-tighten as required.

9) Notes on Dual Rod Option (-D) for Dog Application
- When attaching dog, set up the piston so that it will not turn around. Please secure the dog or cam and prevent any rotation or torque on the piston rod.
  Torque values for the mounting screw are shown in the table below.



Model No.	Thread Size	Tightening Torque (N·m)
WCA0321–2□□D	M5×0.8	6.3
WCA0401–2□□D	M6×1	10
WCA0501–2□□D	M8×1.25	25
WCA0631–2□□D	M8×1.25	25

※ Please refer to P.1045 for common cautions. • Notes on Handling • Maintenance/Inspection • Warranty

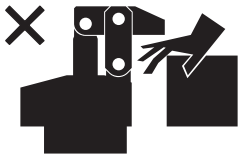
Cautions

Notes on Handling

1) It should be handled by qualified personnel.
- The hydraulic machine and air compressor should be handled and maintained by qualified personnel.

2) Do not handle or remove the machine unless the safety protocols are ensured.
① The machine and equipment can only be inspected or prepared when it is confirmed that the preventive devices are in place.
② Before the machine is removed, make sure that the above-mentioned safety measures are in place. Shut off the air of hydraulic source and make sure no pressure exists in the hydraulic and air circuit.
③ After stopping the machine, do not remove until the temperature cools down.
④ Make sure there is no abnormality in the bolts and respective parts before restarting the machine or equipment.

3) Do not touch clamps (cylinder) while clamps (cylinder) is working. Otherwise, your hands may be injured due to clinching.

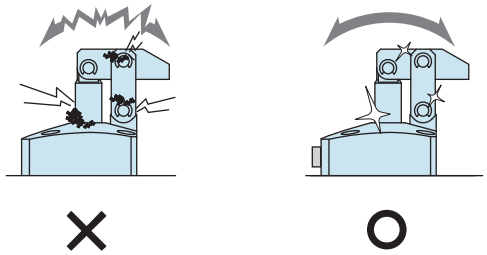


4) Do not disassemble or modify.
- If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

Maintenance and Inspection

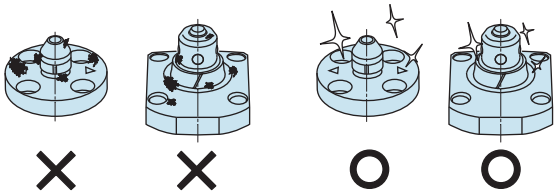
1) Removal of the Machine and Shut-off of Pressure Source
- Before the machine is removed, make sure that the above-mentioned safety measures are in place. Shut off the air of hydraulic source and make sure no pressure exists in the hydraulic and air circuit.
- Make sure there is no abnormality in the bolts and respective parts before restarting.

2) Regularly clean the area around the piston rod and plunger.
- If it is used when the surface is contaminated with dirt, it may lead to packing seal damage, malfunctioning , fluid leakage and air leaks.



3) Please clean out the reference surface regularly (taper reference surface and seating surface) of locating machine .(VS/VT/VL/VM/VJ/VK/WVS/WM/WK/VX/VXF)

- Location products, except VX/VXF model, can remove contaminants with cleaning functions.
  When installing pallets makes sure there is no thick sludge like substances on pallets.
- Continuous use with dirt on components will lead to locating functions not work properly, leaking and malfunction.



4) If disconnecting by couplers on a regular basis, air bleeding should be carried out daily to avoid air mixed in the circuit.

5) Regularly tighten nuts, bolts, pins, cylinders and pipe line to ensure proper use.

6) Make sure the hydraulic fluid has not deteriorated.

7) Make sure there is smooth action and no abnormal noise.
- Especially when it is restarted after left unused for a long period, make sure it can be operated correctly.

8) The products should be stored in the cool and dark place without direct sunshine or moisture.

9) Please contact us for overhaul and repair.

Warranty

1) Warranty Period

- The product warranty period is 18 months from shipment from our factory or 12 months from initial use, whichever is earlier.

2) Warranty Scope

- If the product is damaged or malfunctions during the warranty period due to faulty design, materials or workmanship, we will replace or repair the defective part at our expense.
  Defects or failures caused by the following are not covered.

① If the stipulated maintenance and inspection are not carried out.
② If the product is used while it is not suitable for use based on the operator's judgment, resulting in defect.
③ If it is used or handled in inappropriate way by the operator.
(Including damage caused by the misconduct of the third party.)
④ If the defect is caused by reasons other than our responsibility.
⑤ If repair or modifications are carried out by anyone other than Kosmek, or without our approval and confirmation, it will void warranty.
⑥ Other caused by natural disasters or calamities not attributable to our company.
⑦ Parts or replacement expenses due to parts consumption and deterioration.
(Such as rubber, plastic, seal material and some electric components.)

Damages excluding from direct result of a product defect shall be excluded from the warranty.

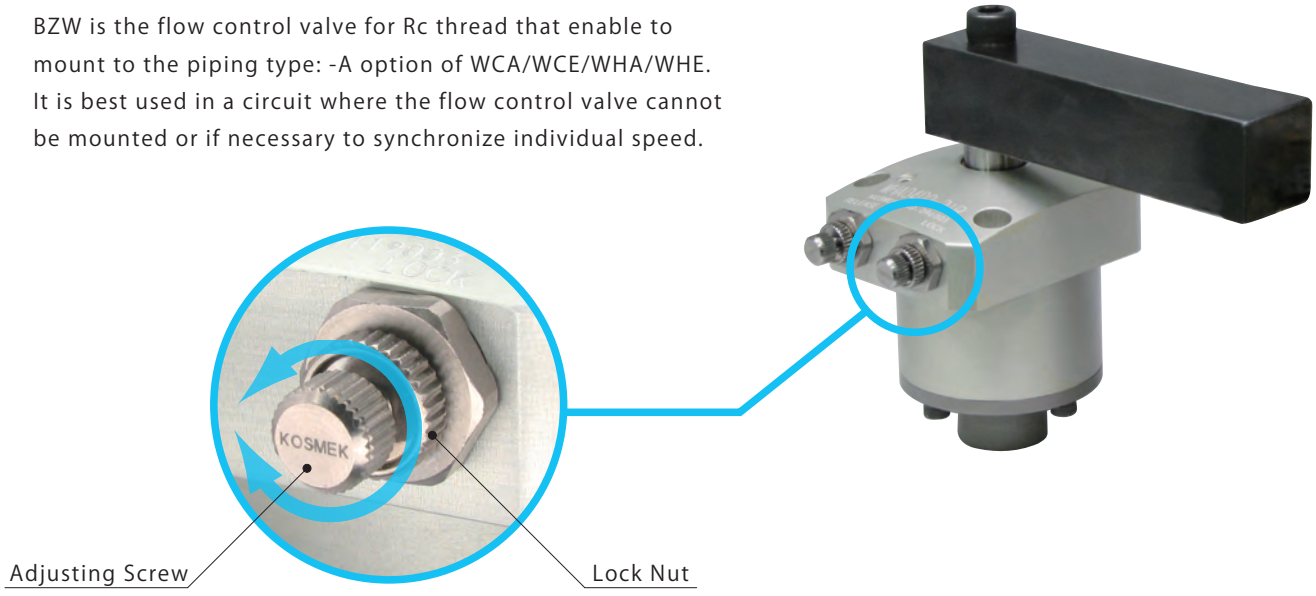
Air Flow Control Valve

Model **BZW**

Directly mounted to clamps, easy adjusting

● Directly mounted to clamps

BZW is the flow control valve for Rc thread that enable to mount to the piping type: -A option of WCA/WCE/WHA/WHE. It is best used in a circuit where the flow control valve cannot be mounted or if necessary to synchronize individual speed.



Corresponding Product Model

Clamps	BZW Model No.	Clamp Model No.
High-Power Pneumatic Link Clamp	BZW0100-A	WCE□1-2 A □
High-Power Pneumatic Swing Clamp	BZW0100-B	WHE□0-2 A □
Pneumatic Swing Clamp		WHA□0-2 A □
Pneumatic Link Clamp		WCA□1-2 A □

Corresponding to piping method -A option.

※ When mounting BZW to piping method G, take off R thread plug and remove the seal tape not to get inside cylinder.

Model No. Indication

BZW 010 0 – B

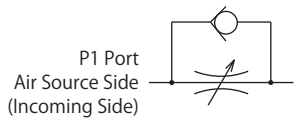
- **B**: Control Method — **B** : Meter-out, **A** : Meter-in
- **0**: Design No. — **0** : Revision Number
- **010**: R Thread Size — **010** : Rc1/8

Specifications

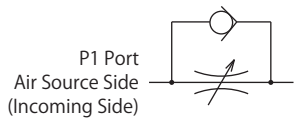
Model No.	BZW0100-B	BZW0100-A
Control Method	Meter-out	Meter-in
Operating Pressure MPa	0.1 ～ 1.0	
Withstanding Pressure MPa	1.5	
Adjust Screw Number of Rotations	10 Rotations	
Tightening Torque N•m	5 ～ 7	
Corresponding Product Model	WHE□0-2A□ WHA□0-2A□ WCA□1-2A□	WCE□1-2A□

Circuit Symbol

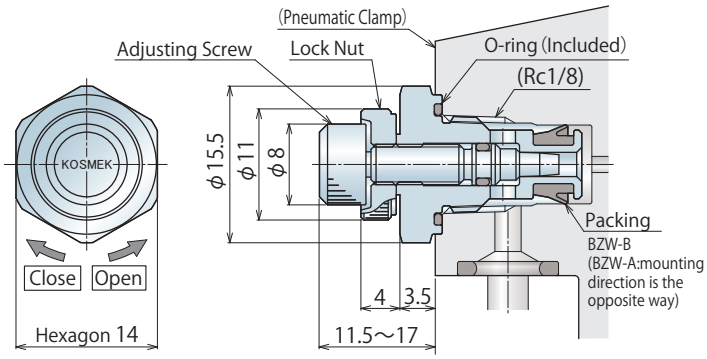
BZW0100-B : Meter-out



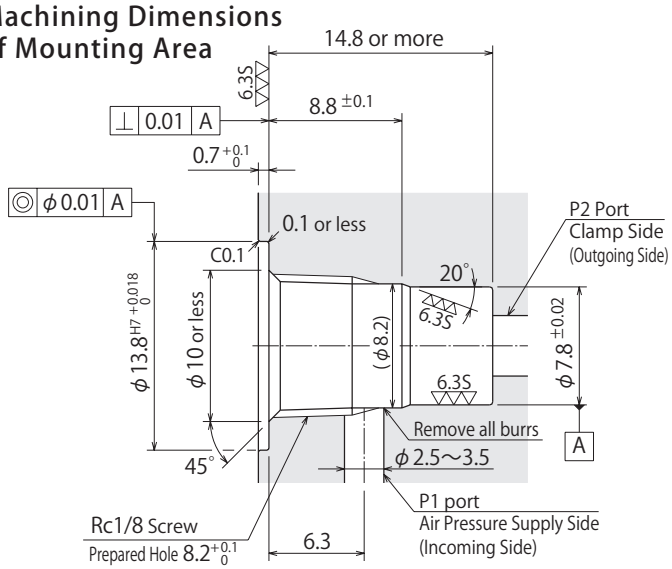
BZW0100-A : Meter-in



External Dimensions

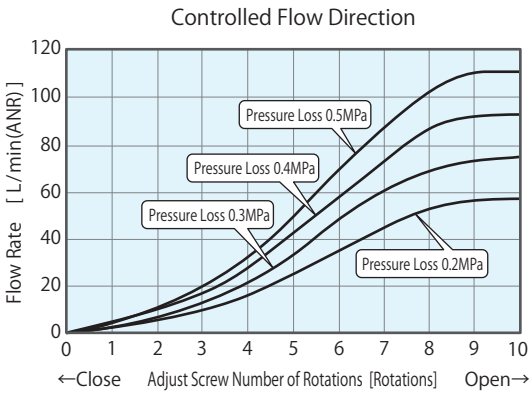


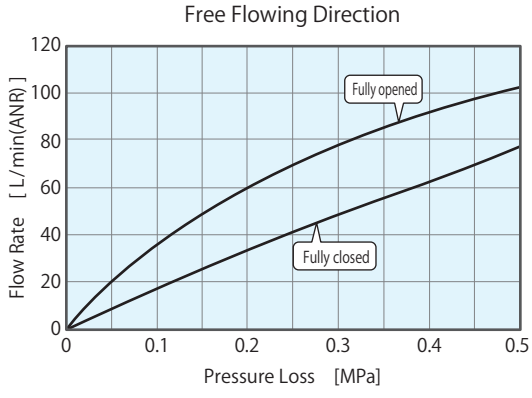
Machining Dimensions of Mounting Area



Flow Rate Graph

BZW0100-B/BZW0100-A common





Notes

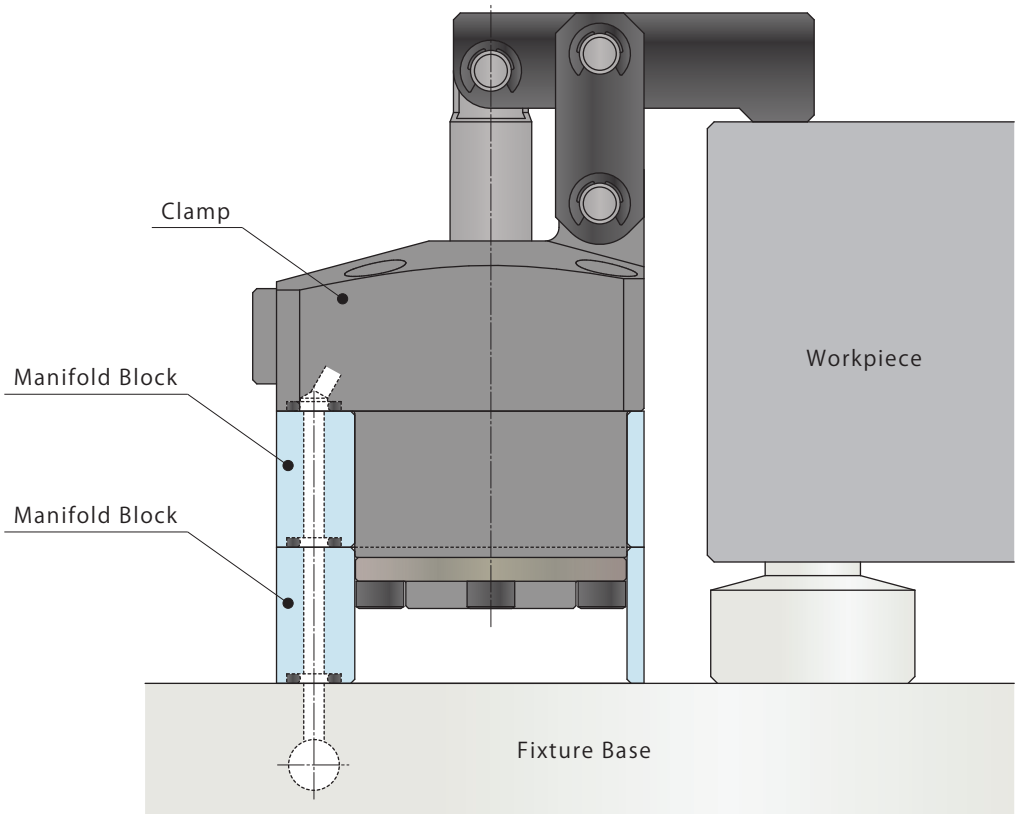
1. As the ▽▽▽ area is sealing part, pay attention not to damage it.
2. Pay attention to have no cutting chips and burring at the tolerance part of the machining hole.
3. As shown in the drawing, P1 port is used as the air supply and P2 port as the clamping supply.

Manifold Block

Model WHZ-MD
Model LZY-MD
Model LZ-MS
Model LZ-MP
Model TMZ-1MB
Model TMZ-2MB
Model DZ-MG□
Model DZ-MS□

Manifold Block

The mounting height of clamp is adjustable with the manifold block.

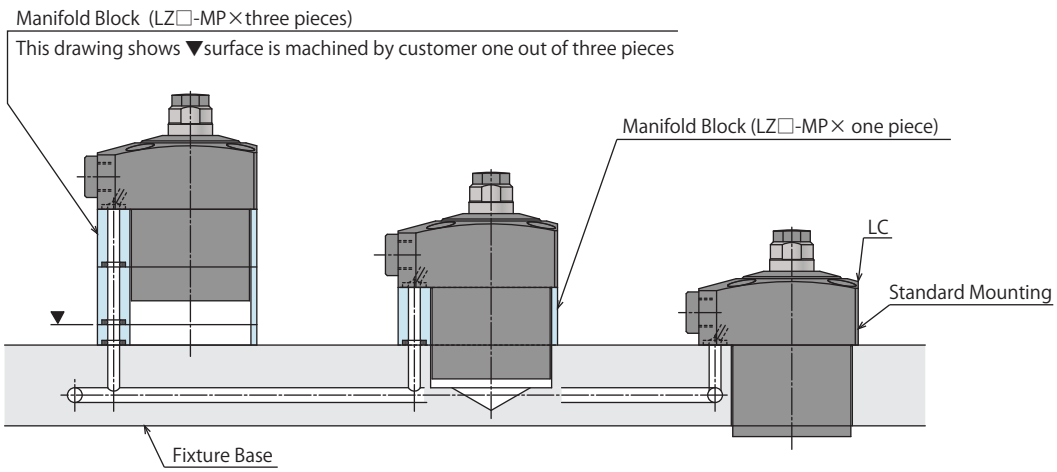


Applicable Model

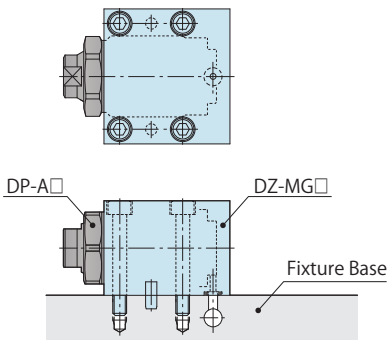
Manifold Block Model No.	Corresponding Item Model No.
Model WHZ-MD	Model WCA, Model WHA, Model WCE, Model WHE
Model LZY-MD	Model LKA, Model LKE, Model LHC, Model LHS, Model LKC, Model LHA, Model LHE, Model LL
Model LZ-MS	Model LM, Model LT, Model LJ, Model LG
Model LZ-MP	Model LC, Model TC
Model TMZ-1MB	Model TMA-1
Model TMZ-2MB	Model TMA-2
Model DZ-MG□/MS□	Model DP

Application Examples

Work Support (LC) Application Example



Push Cylinder (DP) Application Example

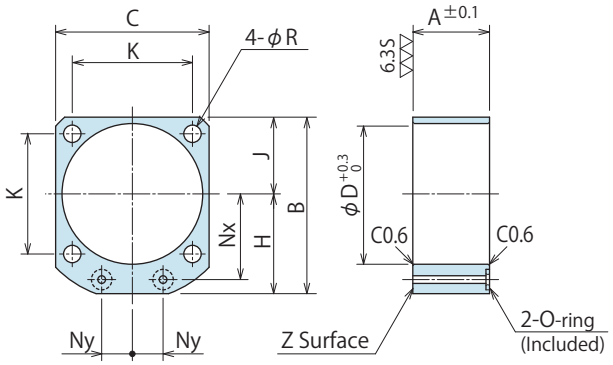


Manifold Block for WCA/WCE/WHA/WHE

Model No. Indication

WHZ 048 0 – MD

- 048: Size (Refer to following table)
- 0: Design No. (Revision Number)



(mm)

Model No.	WHZ0600-MD	WHZ0320-MD	WHZ0400-MD	WHZ0500-MD	WHZ0630-MD
Corresponding Item Model Number	WCE0601 WHE0600	WCA0321 WCE1001 WHA0320 WHE1000	WCA0401 WCE1601 WHA0400 WHE1600	WCA0501 WCE2501 WHA0500 WHE2500	WCA0631 WCE4001 WHA0630 WHE4000
A	23	25	27	31	35
B	54	60	67	77	88.5
C	45	50	58	68	81
D	40	46	54	64	77
H	31.5	35	38	43	48
J	22.5	25	29	34	40.5
K	34	39	45	53	65
Nx	26	28	31	36	41
Ny	9	10	13	15	20
R	5.5	5.5	5.5	6.5	6.5
O-ring	1BP5	1BP7	1BP7	1BP7	1BP7
Mass kg	0.1	0.1	0.1	0.2	0.2

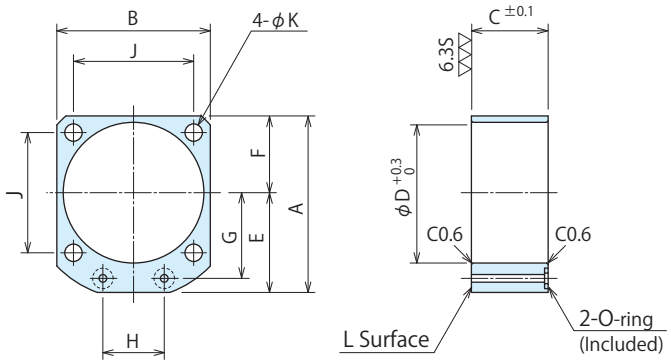
Notes
1. Material: A2017BE-T4
2. Mounting bolts are not provided. Prepare mounting bolts according to the mounting height using the A dimensions as a reference.
3. If thickness other than A is required, perform additional machining on surface Z. Please refer to the drawing.

Manifold Block for LKA/LKC/LKE/LHA/ LHC/LHE/LHS/LL

Model No. Indication

LZY 048 0 – MD

- 048: Size (Refer to following table)
- 0: Design No. (Revision Number)



(mm)

Model No.	LZY0360-MD	LZY0400-MD	LZY0480-MD	LZY0550-MD	LZY0650-MD	LZY0750-MD	LZY0900-MD	LZY1050-MD
Corresponding Item Model Number	LKA0360 / LKE0360 LHA0360 / LHC0360 LHE0360 / LHS0360 LL0360	LKA0400 / LKC0400 LKE0400 / LHA0400 LHC0400 / LHE0400 LHS0400 / LL0400	LKA0480 / LKC0480 LKE0480 / LHA0480 LHC0480 / LHE0480 LHS0480 / LL0480	LKA0550 / LKC0550 LKE0550 / LHA0550 LHC0550 / LHE0550 LHS0550 / LL0550	LKA0650 / LKC0650 LHA0650 / LHC0650 LHS0650 LL0650	LKA0750 LHA0750 LHS0750 LL0750	LKA0900 LHA0900 LHS0900 LL0900	LKA1050 LHA1050 LHS1050 LL1050
A	49	54	61	69	81	92	107	122
B	40	45	51	60	70	80	95	110
C	20	20	27	30	32	37	45	50
D	36	40	48	55	65	75	90	105
E	29	31.5	35.5	39	46	52	59.5	67
F	20	22.5	25.5	30	35	40	47.5	55
G	23.5	26	30	33.5	39.5	45	52.5	60
H	16	18	22	24	30	32	37	45
J	31.4	34	40	47	55	63	75	88
K	4.5	5.5	5.5	6.8	6.8	9	11	14
O-ring	1BP5	1BP5	1BP5	1BP5	1BP7	1BP7	1BP7	1BP7
Mass kg	0.2	0.2	0.3	0.4	0.5	0.8	1.2	1.7

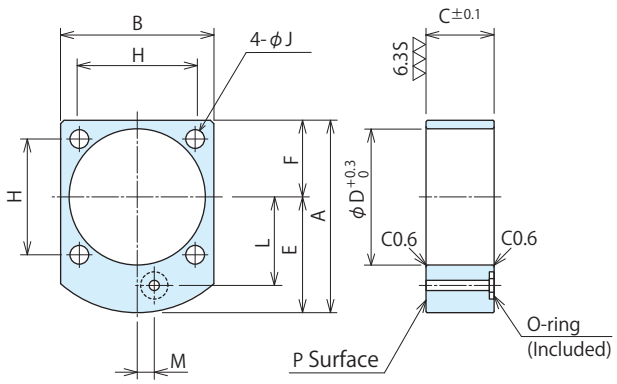
Notes
1. Material: S45C
2. Mounting bolts are not provided. Prepare mounting bolts according to the mounting height using the C dimensions as a reference.
3. If thickness other than C is required, perform additional machining on surface L. Please refer to the drawing.

Manifold Block for LM/LJ/LT/LG

Model No. Indication

LZ 048 0 – MS

- 048: Size (Refer to following table)
- 0: Design No. (Revision Number)



(mm)

Model No.	LZ0360-MS	LZ0400-MS	LZ0480-MS	LZ0550-MS	LZ0650-MS	LZ0750-MS	LZ0900-MS	LZ1050-MS
Corresponding Item Model Number	LT0360 LM0360	LT0400 LM0400	LT0480 LM0480	LT0550 LM0550	LT0650 LM0650	LT0750 LM0750	LG0900 LJ0902	LG1050 LJ1052
A	51.5	56.5	62	70	82	93	107	122
B	40	45	51	60	70	80	95	110
C	20	20	27	30	32	37	45	50
D	36	40	48	55	65	75	90	105
E	31.5	34	36.5	40	47	53	59.5	67
F	20	22.5	25.5	30	35	40	47.5	55
H	31.4	34	40	47	55	63	75	88
J	4.5	5.5	5.5	6.8	6.8	9	11	14
L	23.5	26	30	33.5	39.5	45	52.5	60
M	5	5	0	0	0	0	0	0
O-ring	1BP5	1BP5	1BP5	1BP5	1BP7	1BP7	1BP7	1BP7
Mass kg	0.2	0.2	0.3	0.4	0.5	0.8	1.2	1.7

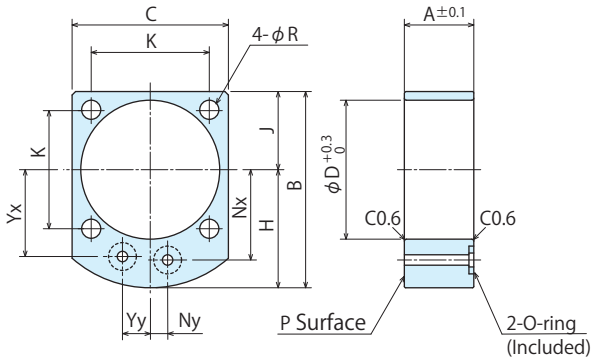
Notes
1. Material:S45C
2. Mounting bolts are not provided. Prepare mounting bolts according to the mounting height using the C dimensions as a reference.
3. If thickness other than C is required, perform additional machining on surface L. Please refer to the drawing.

Manifold Block for LC/TC

Model No. Indication

LZ 048 0 – MP

- 048: Size (Refer to following table)
- 0: Design No. (Revision Number)



(mm)

Model No.	LZ0400-MP	LZ0480-MP	LZ0550-MP	LZ0650-MP	LZ0750-MP	LZ0900-MP
Corresponding Item Model Number	LC0402 TC0402	LC0482 TC0482	LC0552 TC0552	LC0652 TC0652	LC0752 TC0752	LC0902
A	20	27	30	32	37	45
B	56.5	62	70	82	93	107
C	45	51	60	70	80	95
D	40	48	55	65	75	90
H	34	36.5	40	47	53	59.5
J	22.5	25.5	30	35	40	47.5
K	34	40	47	55	63	75
Nx	26	30	33.5	39.5	45	52.5
Ny	5	0	0	0	0	0
R	5.5	5.5	6.8	6.8	9	11
Yx	25	28	31	37	42.5	50
Yy	8	11	13	14	15	15
O-ring	1BP5	1BP5	1BP5	1BP7	1BP7	1BP7
Mass kg	0.2	0.3	0.4	0.5	0.8	1.2

Notes
1. Material:S45C
2. Mounting bolts are not provided. Prepare mounting bolts according to the mounting height using the A dimensions as a reference.
3. If thickness other than A is required, perform additional machining on surface P. Please refer to the drawing.

Sales Offices

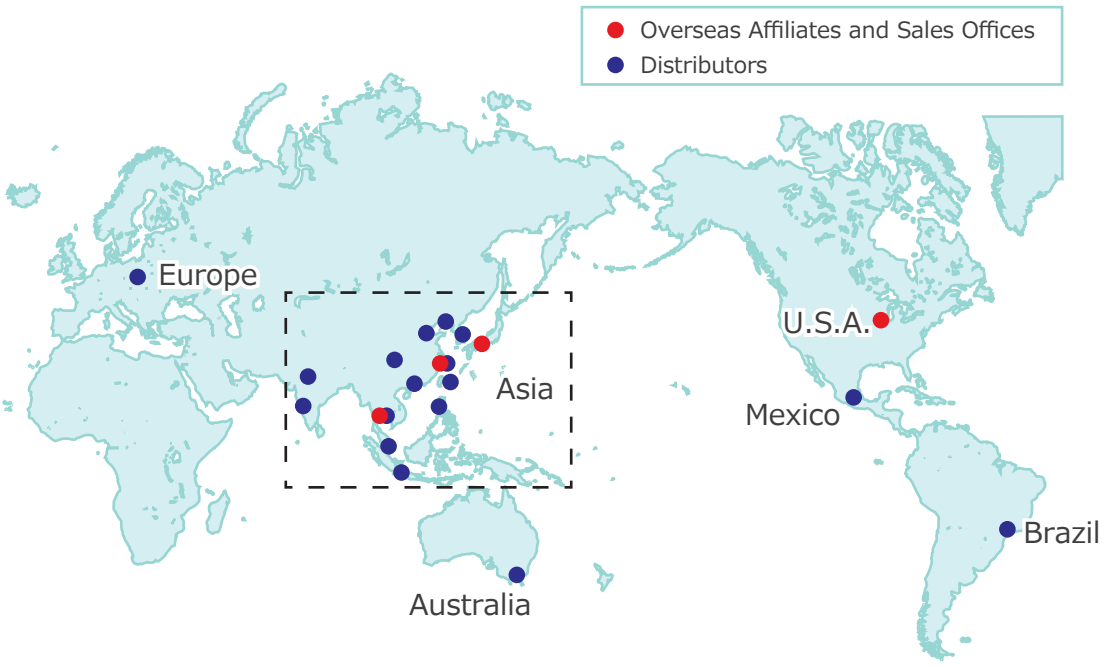
Sales Offices across the World

Japan Overseas Sales	**TEL. +81-78-991-5162**	FAX. +81-78-991-8787 KOSMEK LTD. 1-5, 2-chome, Murotani, Nishi-ku, Kobe-city, Hyogo, Japan 651-2241 〒651-2241　兵庫県神戸市西区室谷2丁目1番5号
USA KOSMEK（USA）LTD.	**TEL. +1-630-241-3465**	FAX. +1-630-241-3834 1441 Branding Avenue, Suite 110, Downers Grove, IL 60515 USA
China KOSMEK（CHINA）LTD. 考世美(上海)貿易有限公司	**TEL.+86-21-54253000**	FAX.+86-21-54253709 21/F, Orient International Technology Building, No.58, Xiangchen Rd, Pudong Shanghai 200122., P.R.China 中国上海市浦东新区向城路58号东方国际科技大厦21F室 200122
Thailand Thailand Representative Office	**TEL. +66-2-715-3450**	FAX. +66-2-715-3453 67 Soi 58, RAMA 9 Rd., Suanluang, Suanluang, Bangkok 10250, Thailand
Taiwan (Taiwan Exclusive Distributor) Full Life Trading Co., Ltd. 盈生貿易有限公司	**TEL. +886-2-82261860**	FAX. +886-2-82261890 16F-4, No.2, Jian Ba Rd., Zhonghe District, New Taipei City Taiwan 23511 台湾新北市中和區建八路2號 16F－4（遠東世紀廣場）
Philippines (Philippines Exclusive Distributor) G.E.T. Inc, Phil.	**TEL.+63-2-310-7286**	FAX. +63-2-310-7286 Victoria Wave Special Economic Zone Mt. Apo Building, Brgy. 186, North Caloocan City, Metro Manila, Philippines 1427
Europe (Europe Exclusive Distributor) KOS-MECH GmbH	**TEL. +43-463-287587-10**	FAX. +43-463-287587-20 Schleppeplatz 2 9020 Klagenfurt Austria
Indonesia (Indonesia Exclusive Distributor) P.T PANDU HYDRO PNEUMATICS	**TEL. +62-21-5818632**	FAX. +62-21-5814857 Ruko Green Garden Blok Z-Ⅱ No.51 Rt.005 Rw.008 Kedoya Utara-Kebon Jeruk Jakarta Barat 11520 Indonesia

Sales Offices in Japan

Head Office Osaka Sales Office Overseas Sales	**TEL.078-991-5115**	FAX.078-991-8787 〒651-2241　兵庫県神戸市西区室谷2丁目1番5号
Tokyo Sales Office	**TEL.048-652-8839**	FAX.048-652-8828 〒331-0815　埼玉県さいたま市北区大成町4丁目81番地
Nagoya Sales Office	**TEL.0566-74-8778**	FAX.0566-74-8808 〒446-0076　愛知県安城市美園町2丁目10番地1
Fukuoka Sales Office	**TEL.092-433-0424**	FAX.092-433-0426 〒812-0006　福岡県福岡市博多区上牟田1丁目8-10-101

Global Network



Asia Detailed Map

KOSMEK
Harmony in Innovation

- FOR FURTHER INFORMATION ON UNLISTED SPECIFICATIONS AND SIZES, PLEASE CALL US.
- SPECIFICATIONS IN THIS CATALOG ARE SUBJECT TO CHANGE WITHOUT NOTICE.

ISO 9001
JQA-QMA10823
KOSMEK HEAD OFFICE
JAB
CM009